

REPORT

1. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:
an electrostatic discharge conducting contact element which is in time-extended contact with a person who is to be protected from electrostatic discharge when in use;
a control circuit electrically connected to said contact element, said control circuit including a first resistor element having a resistance which upon initial contact between the person and said contact element will drain some, but not all, electrostatic discharge from said contact element;
an inductor in series with said contact element; and
a ground circuit electrically associated with said control circuit.
2. The system defined in Claim 1 wherein the first resistor element is physically located closely adjacent to said contact element.
3. The system defined in Claim 1 wherein said first resistor element is in series with contact element.
4. The system defined in Claim 3 wherein said control circuit further includes a second resistor element in series with said inductor.

5. The system defined in Claim 4 wherein said control circuit has the inductor physically located between the first and second resistor elements and the first resistor element is physically located between said contact element and the inductor.

6. The system defined in Claim 2 wherein said first resistor is located within one foot of said contact element.

7. The system defined in Claim 1 wherein said control circuit further includes a second resistor, and said second resistor has a value of at least one megohm.

8. The system defined in Claim 1 wherein said control circuit further includes a capacitor in series with said first resistor element.

9. The system defined in Claim 1 wherein said control circuit further includes a transistor in series with said first resistor element.

10. The system defined in Claim 1 further including a second electrostatic conducting contact element.

11. The system defined in Claim 1 wherein the time extended contact is greater than 100 milliseconds.

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12. The system defined in Claim 1 further including a user contacting element and said electrostatic discharge conducting contact element is located in said user contacting element.

13. The system defined in Claim 12 wherein said user contacting element includes a computer mouse pad.

14. The system defined in Claim 1 wherein said first resistor has a value of approximately sixty megohms.

15. The system defined in Claim 1 wherein said ground circuit includes signal leads.

16. The system defined in Claim 1 further including a conductor electrically connecting said contact element to said ground circuit, with said resistor being located within one foot of said contact element and further including second resistor in said conductor and located spaced from said first resistor and adjacent to said ground circuit.

17. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:
an electrostatic discharge conducting contact element which is in
time-extended contact with a person who is to be protected
from electrostatic discharge when in use;

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21. The system defined in Claim 20 wherein said electrical plug includes a ground prong.

22. The system defined in Claim 20 further including a test circuit.

23. The system defined in Claim 20 and wherein said first resistor is physically located closely adjacent to said contact element.

24. The system defined in Claim 23 and wherein said control circuit further includes an inductor and a second resistor in series with said first resistor.

25. The system defined in Claim 24 wherein said inductor has an inductance of less than one millihenry.

26. The system defined in Claim 24 wherein said second resistor has a resistance of one megohm.

27. The system defined in Claim 20 wherein said plug includes a prong positioned as a hot prong, said prong being non-conductive from said plug.

28. The system defined in Claim 27 wherein said plug further

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includes a neutral prong positioned as a neutral prong, said neutral prong being non-conductive from said plug.

29. The system defined in Claim 20 wherein said plug includes female receptacles.

30. The system defined in Claim 20 wherein said plug includes an internal resistor having a value of at least one megohm.

31. The system defined in Claim 20 wherein said plug includes a plurality of grounding connectors.

32. The system defined in Claim 1 further including a plug adapter with said control circuit being at least partially located in said plug adapter.

33. The system defined in Claim 32 further including an output lead from said plug.

34. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:
a headphone device;

an electrostatic discharge conducting contact element which is
located in said headphone device to be in time-extended
contact with a person who is using said headphone device and

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includes a conductive headset pad.

40. The system defined in Claim 39 wherein said conductive headset pad has a resistance of at least 0.025 megohms.

41. The system defined in Claim 34 wherein said control circuit is connected to an ear pad on said headphone device.

42. A system for protecting a person from surprise or painful electrostatic discharge (ESD) comprising:

a user contacting device having a plurality of user contacting locations thereon;

an electrostatic discharge conducting contact element at each user contacting location of the plurality of user contacting locations and which contact a user in a time-extended manner when in use;

a control circuit electrically connected to each of said contact elements and including a first resistor having a resistance that is sized to upon initial contact between the user and said contact element drain some, but not all, electrostatic charge from said contact element; and
a ground circuit electrically associated with said control circuit.

43. The system defined in Claim 42 wherein the user contacting

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locations of said user contacting device are electrically insulated from each other.

44. The system defined in Claim 43 wherein the user contacting locations include a plurality of shapes.

45. The system defined in Claim 42 wherein said control circuit further includes a capacitor.

46. The system defined in Claim 42, wherein each of said first resistors has a resistance of approximately five megohms.

47. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:
a computer mouse;

an electrostatic discharge conducting contact element which is
located in said computer mouse to be in time-extended
contact with a person who is using said computer mouse and
who is to be protected from electrostatic discharge when
using said computer mouse;
a control circuit electrically connected to said contact element,
said control circuit including a first resistor element
having a resistance which will upon initial contact between
the user and said contact element drain some, but not all,
electrostatic charge from said contact element; and

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a ground circuit electrically associated with said control circuit.

48. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:

a computer keyboard;

an electrostatic discharge conducting contact element which is located in said computer keyboard to be in time-extended contact with a person who is using said computer keyboard and who is to be protected from electrostatic discharge when using said computer keyboard;

a control circuit electrically connected to said contact element, said control circuit including a first resistor element having a resistance which will upon initial contact between the user and said contact element drain some, but not all, electrostatic charge from said contact element; and

a ground circuit electrically associated with said control circuit.

49. The system defined in Claim 48 wherein said user contacting element includes a computer keyboard and said contact element is located in a key on said computer keyboard.

50. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:

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an electrostatic discharge conducting contact element which is in
time-extended contact with a person who is to be protected
from electrostatic discharge when in use;

a ground circuit; and

a Litz wire electrically connecting said contact element to
said ground circuit.

51. The system defined in Claim 50 further including a resistor
in series between said Litz wire and said ground circuit.

52. The system defined in Claim 1 wherein said first resistor
element is in series with said contact element.

53. The system defined in Claim 1 further including a second
resistor element, with said first resistor element being located
closer to said contact element than said second resistor and said
second resistor being located closer to said ground circuit than
said first resistor.

54. A system for protecting a person from surprise or
uncomfortable electrostatic discharge (ESD) comprising:
an electrostatic discharge conducting contact element which is in
time-extended contact with a person who is to be protected
from electrostatic discharge when in use;
a ground circuit;

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a conductor connecting said contact element to said ground circuit;

a first resistor element in said conductor near said ground circuit, said first resistor element being sized to prevent AC shock from moving from said ground circuit past said first resistor and through said conductor toward said contact element; and

a second resistor element in said conductor nearer to said contact element than said first resistor to reduce initial contact shock, said first and having a resistance which upon initial contact between the person and said contact element will drain some, but not all, electrostatic charge from said contact element.

55. The system defined in Claim 20 wherein said plug includes a plurality of internal resistors.

56. The system defined in Claim 48 further including an inductor in series with said contact element.

57. The system defined in Claim 47 further including an inductor in series with said contact element.

58. The system defined in Claim 42 further including an inductor in series with each contact element.

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64. A system for protecting a person from surprise or uncomfortable electrostatic discharge (ESD) comprising:
an electrostatic discharge conducting contact element which is in
means for contacting a person who is to be protected from
electrostatic discharge when in use in a time-extended
manner;
means for draining some, but not all, electrostatic charge from
the person upon initial contact between that person and said
means for contacting a person;
means for reducing radio frequency interference associated with
said means for draining; and
means for grounding said means for contacting a person.

65. The system defined in Claim 64 further including means for protecting said means for contacting a person from effects associated with improper grounding.

66. The system defined in Claim 65 further including a plurality of means for contacting a person.

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